# The Effect of Transformational Leadership and Psychological Empowerment on Turnover Intention: The Role of Work Engagement in Maritime Crew Members

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DOI: https://doi.org/10.56293/IJMSSSR.2026.6208

**IJMSSSR 2026**
**VOLUME 8**
**ISSUE 3 MAY - JUNE** **ISSN: 2582 – 0265**

**Abstract:** This study examines the effects of transformational leadership and psychological empowerment on turnover intention among maritime crew members (ABK) in Indonesia, with work engagement as a mediating variable. Using a total sampling approach (n = 80) and PLS-SEM analysis, the findings reveal that both transformational leadership and psychological empowerment significantly reduce turnover intention and enhance work engagement. However, work engagement does not significantly influence turnover intention and fails to mediate the relationships between the independent variables and turnover intention. These findings suggest that, in high-pressure maritime contexts, direct psychological and leadership factors play a more critical role than attitudinal mechanisms in shaping turnover decisions. This study contributes to the literature by highlighting contextual limitations of work engagement as a mediator in non-traditional, high-risk work environments.

**Keywords:** Psychological Empowerment, Transformational Leadership, Turnover Intention, Work Engagement

## 1. INTRODUCTION

The maritime logistics industry plays a crucial role in supporting the supply chain of strategic national commodities, such as coal, crushed stone, and oil. This crucial role has become increasingly apparent as mining commodity transportation activity has increased in recent years, resulting in greater vessel operational intensity in the national maritime logistics industry. Referring to Pelni's 2023 annual report (shown in Table 1), the volume of goods transported using maritime logistics reached 351 million tons, significantly higher than in 2020-2022 (Central Statistics Agency, 2023; Pelni, 2024). This increase is relevant and in line with data from the Ministry of Energy and Mineral Resources (ESDM), which indicates that national coal production is also increasing, even exceeding the target of 694.5 million tons, while actual production reached 775.2 million tons in 2023 (Ministry of Energy and Mineral Resources, 2024). Based on this data, the increase in goods volume and commodity production means the maritime logistics industry is experiencing greater operational pressure, particularly in shipping frequency, shipping safety, and on-time delivery.

**Table 1. National Sea Freight Volume in 2020-2023**

| Year | National Sea Transportation Goods Volume (million tons) |
|---|---|
| 2020 | 284.17 million tons |
| 2021 | 303.23 million tons |
| 2022 | 311.52 million tons |
| 2023 | 351 million tons |

Source: Central Statistics Agency (2023) and Pelni (2024)

The increase in operational pressure at the industry level has not only a macro impact but also a micro one, meaning that various maritime logistics companies operating within it are also directly affected. In the context of PT ABC, a maritime logistics company that operates tugboats and barges for the transportation of mining products such as coal, split stone, and oil with its operational center in Banjarmasin, South Kalimantan. The company's operations are highly dependent on crew members, with 80 in total across 8 pairs of tugboats and barges. It is known that the average length of service of crew members at this company is 2.5 years per crew member. Meanwhile, over the last three years, 24 employees have left, all of whom were crew members. The reasons for leaving are varied; some crew members feel dissatisfied with the salary received, there are disagreements with coworkers (there are problems), and family reasons. However, there are also other reasons, such as the desire to continue their education. According to PT ABC's Human Resources, this is often the reason for the turnover trend among crew members and certainly greatly disrupts the productivity of PT ABC's vessels.
As the intensity of company operations increases, crew members, the primary workforce for ship operations, face various challenges and experience increased physical, mental, and social stress, which is unique and severe. The work environment at sea can be described as extremely demanding, combining long work hours, shifts, and repetitive tasks, high safety risks, distance from family, and limited communication facilities. These conditions can contribute to high levels of work stress and fatigue. Nationally, research indicates that work stress, a challenging work environment, and a lack of company support are contributing factors to crew turnover in Indonesia (Usmar et al., 2025; Yulius & Lubis, 2021).

There are indications that the crew members' psychological factors are crucial, as reflected in the internal dynamics of PT ABC. It is known that in addition to the personal reasons discussed previously, there are also other reasons related to psychological factors based on data from PT ABC's Human Resources, such as feeling a lack of direction and support from their leader (captain), some feel too dictated to so they have less role in decision-making, and there are also those who have experienced a decrease in morale so that their engagement with their work decreases. The various reasons for crew member turnover cannot be taken as a general picture of the quality of managerial practices at PT ABC, but they can serve as an initial indication that psychological aspects of the work relationship can influence crew members' turnover intentions. Therefore, the relevance of these psychological factors needs to be further analyzed to understand how the dynamics of maritime work can influence crew members' decisions to stay or leave their jobs. In addition, with the fact that as many as 8 crew members leave/year or a turnover rate of PT ABC of 10%/year, this means that this could potentially disrupt the company's operational stability if it continues, due to the vital role of crew members in ship productivity, compliance with cargo schedules, and the safety of the voyage itself.

**Table 2. Reasons for ABK Turnover at PT ABC**

| Personal Factors | Psychological Factors |
|---|---|
| Does not match the salary received | Feeling that he is not getting enough direction and support from his leader (captain) |
| Not getting along with coworkers (there are problems) | Feeling too dictated to and having less of a role in decision making |
| A family reason | Experiencing a decrease in enthusiasm so that his commitment to his work decreases |
| Desire to continue education | |

Source: PT ABC Internal Data (2025)

In addition, the high intensity of the ABK's work can be seen from the following internal data from PT ABC, namely daily working hours of 10-12 hours with a 4-6 hour shift pattern, and implementing a work rotation system, namely a self-replacement system, meaning that there is actually no leave for the ABK so they are required to find their own replacement if they want to apply for leave for 1 month. Then, each ship from this company sails 2-3 times per month, which can cause ABK to experience continuous physical and mental stress. These internal data are certainly very closely related to turnover intention, where long working hours and high operational loads can be crucial factors that increase fatigue, work stress, and even the desire to leave the job.

Given existing working conditions, working as a crew member not only demands physical capacity but also has the potential to cause psychological stress, affecting how crew members feel and how they carry out their work every day. With the high work pressure in the shipping environment, it can certainly put a physical and psychological burden, reducing crew members' mental resilience. Furthermore, with working conditions full of difficulties and limitations, it is very possible to increase the risk of psychological exhaustion and crew members' detachment from their work. This weakened psychological condition can lead to the emergence of a tendency for crew members to consider leaving their jobs, thus increasing the risk of turnover intention in demanding operational situations such as at PT ABC.

Turnover intention is a conscious, deliberate desire by an employee to leave his company (Tett & Meyer, 1993) and is considered able to predict actual turnover (Griffeth et al., 2000), making it the strongest predictor of this behavior. In the maritime context in Asia, several studies have shown that the high turnover rate of crew members is due to a combination of various factors, namely high job demands, a tough environment, psychological stress and continuous physical fatigue, which indicates that working conditions at sea are high risk to the psychology of crew members and are different when compared to industries on land (An et al., 2020; Gu et al., 2020; Jonglertmontree et al., 2022).

In this context, various factors can influence crew members' assessments of whether their jobs are still worth retaining or whether they would be better off leaving the company. One crucial factor is the quality of leadership within the company itself, including on board ships. On ships, the leadership figure (both the captain and the Chief of Staff) plays a crucial role due to the high, ongoing interaction between the leader and his subordinates during the voyage, both physically and psychologically. When a leader can be an inspirational figure, able to support the goals and targets of individuals and the larger organization (Bass & Riggio, 2006), and provide mentoring, support, and coaching to their subordinates as followers (Yücel, 2021), the leader is implementing transformational leadership. According to Yao & Huang (2018), leadership positively influences workers' desire to stay, especially among crew members in the shipping industry. This means that when leadership is carried out well by leaders, especially on ships, it can have a positive impact on the crew members as their subordinates, thereby reducing turnover intention. This also applies to PT ABC, where with high operational intensity, the role of a leader is needed to be able to direct and internally the company, including on board, to remain conducive so that the targets that are to be achieved together can be realized.

Furthermore, another important factor is crew members' psychological empowerment. In the maritime industry, studies have found that crew members with low perceived control and limited decision-making space exhibit high levels of turnover and are more likely to seek other employment (Mcveigh et al., 2019). Other findings also suggest that psychosocial stress, high workloads, and minimal company support contribute to mental health issues and, ultimately, turnover intention among crew members (Jonglertmontree et al., 2022). In the context of PT ABC, strict task allocation based on job descriptions makes things more organized. However, given the unique and specialized conditions in the field, decision-making skills and confidence in competence are crucial for crew members' psychological well-being.

Furthermore, work engagement can be a crucial link between transformational leadership and psychological empowerment, thereby further minimizing the emergence of turnover intention. When employees receive positive direction and guidance from their leaders and optimal psychological empowerment from the company, both forms of company support increase employee involvement and attachment to their work. And employees with high work engagement tend to be more loyal, thus reducing the risk of turnover intention (Halbesleben & Wheeler, 2008). Given the high work intensity at PT ABC, the importance of employee work engagement is even greater.

Furthermore, within the context of social exchange theory (SET), the entire reciprocal process described above can be systematically explained. When company employees receive optimal support, guidance, direction, and psychological empowerment from both leaders and the company, they will be motivated to respond positively, such as increased work engagement and decreased turnover intention (Cropanzano & Mitchell, 2005). This concept is also relevant to the context of PT ABC, where crew members work in a special and unique environment with challenging conditions, requiring social support from both the company and leaders, especially

on board, to maintain their attachment to their work and loyalty to the company.

Several previous studies have extensively discussed the relationship between variables such as transformational leadership, psychological empowerment, work engagement, and turnover intention (Al Otaibi et al., 2023; Chen & Cuervo, 2022; Memon et al., 2021; Monje-Amor et al., 2021; Suifan et al., 2020), but most of these studies were tested partially, and the four variables were not integrated into a single conceptual model, as in this study. Furthermore, most of these previous studies were conducted overseas, in the context of land-based industries, including Spain, the United Kingdom, Jordan, Malaysia, Saudi Arabia, and China. Therefore, it is still difficult to apply the Indonesian context and the maritime logistics industry. The cultural context, regulations, and characteristics of the maritime logistics industry in Indonesia, in this case PT ABC as the research object, will produce different dynamics.

Thus, it can be seen that there are several research gaps that are attempted to be filled in this study, namely the lack of previous studies that use the maritime industry as a research object with similar research topics, so that the findings in previous studies cannot be directly generalized to the context of this study due to differences in industry and country, even with relevant topics. Another research gap is the scarcity of previous studies examining the mediating role of work engagement in ABK (maritime industry). The next research gap is that the four variables used in this study are not found in a single model, and the same is true of previous studies that integrate them into a single conceptual model in the maritime industry.

Based on the description, this study was conducted to test the effects of applying transformational leadership and psychological empowerment on turnover intention at ABK PT ABC, with work engagement as a mediating variable. This study can serve as a reference and evaluation material for stakeholders in developing the application of transformational leadership and psychological empowerment to reduce turnover intention at PT ABC. This study extends the social exchange theory literature by demonstrating that, in high-risk, high-intensity maritime environments, psychological and leadership factors exert direct effects on turnover intention, while attitudinal mechanisms, such as work engagement, may play a limited mediating role.

## 2. LITERATURE REVIEW

### 2.1.1 Social Exchange Theory (SET)

The concept of SET was initially proposed by George C. Homans (1958) and later developed by Blau (1964), with the essence that social interaction in the workplace occurs on the principle of reciprocity (reciprocity) between individuals and their organizations based on the norm of mutual giving and receiving equal benefits. In other words, social exchange theory is a voluntary action carried out by one party (e.g., an organization) for another (e.g., an employee), with the assumption that the action will be returned in kind (Blau, 1964). This means that this social relationship will persist if justice and equality are created for both parties in the exchange process. Aryee et al. (2002) argue that social exchange is based on the exchange of long-term assistance that does not involve calculation and is based on a distributed obligation to reciprocate. SET theorists state that in reciprocity, employees are encouraged to uphold a balanced relationship with their organization. Simply put, SET argues that one's actions depend on others' reactions, even though significant effort is required to achieve beneficial results. In an organizational context, exchange relationships become beneficial when an organization effectively manages its human resources, cares about employee well-being, and fosters perceptions of fairness and justice (Eisenberger et al., 1990). Therefore, employees feel morally or ethically compelled to reciprocate; their organization acts as a responsible employer (Cheung et al., 2018).

Based on social exchange theory, transformational leadership and psychological empowerment can be viewed as organizational resources that elicit reciprocal responses from employees, thereby increasing work engagement and reducing turnover intention. However, in extreme work environments such as maritime operations, this exchange mechanism may not always operate through attitudinal mediators, but rather through direct behavioral responses.

### 2.1.2 Transformational Leadership

Burns (1978) first introduced the concept of transformational leadership, defined as a process in which leaders and followers help each other advance to higher levels of morality and motivation. According to Burns, a transformational approach creates significant change in the lives of people and organizations (Al-Musadieq et al., 2018). Given that transformational leadership is follower-centered and a process for achieving shared goals, leaders must provide appropriate direction that can be understood and implemented by their followers, as well as concrete examples of how to implement it (Park & Pierce, 2020). Therefore, transformational leaders consider themselves to be real and moral examples for their followers to work as well as possible for the benefit of the team. Transformational leadership is also based on strong identification among followers, the leader, and the social unit in which leadership occurs (Tafvelin et al., 2014). Transformational leaders encourage their followers to achieve extraordinary results by providing understanding and meaning. Transformational leaders support the goals and targets of both individuals and the larger organization (Bass & Riggio, 2006) and provide mentoring, support, and coaching to employees as followers (Yücel, 2021).

### 2.1.3 Psychological Empowerment

Psychological empowerment is defined as an individual's experience of intrinsic motivation that increases self-efficacy in the workplace (Spreitzer, 1995). This concept also emphasizes how employees interpret their work, feel capable based on their competencies and self-confidence, and influence the company they work for. Psychological empowerment (PE) is also a subjective, cognitive, and attitudinal process that helps individuals feel psychologically effective, competent, and empowered to carry out tasks (Llorente-Alonso et al., 2024). When someone realizes how empowered they are through their abilities and competencies, a sense of psychological ownership and confidence in their ability to contribute to the company emerges. Therefore, psychological empowerment is a crucial factor in increasing work engagement and, consequently, reducing turnover intention (Al Otaibi et al., 2023; Ding, 2023). In the context of crew members (ABK), psychological empowerment has a distinctly different dynamic compared to land-based work due to the hierarchical command structure, limited autonomy, and strict safety regulations. However, there are previous studies that show that psychological empowerment can be formed in the maritime work environment if crew members master the required competencies, understand the importance of their duties, and are able to respond to their leader's trust in the form of freedom in choosing how to carry out their duties with the impact provided (Nurahaju et al., 2015).

### 2.1.4 Work Engagement

Cognitive characteristics relate to employees' perspectives on working conditions and how and by whom the company is directed (Saks, 2019). Emotional aspects reflect employees' actual experiences with these factors (De Klerk & Stander, 2014). Schaufeli et al. (2002) define work engagement as a holistic, positive state of mind related to work, conceptualized as three constructs: vigor, dedication, and absorption. Based on the definition of work engagement by Schaufeli et al. (2002), Daderman and Basinska (2016) argue that vigor and dedication form the foundation of work engagement, while absorption is related to the concept of flow and plays a different role in other dimensions (Schaufeli et al., 2009). Schaufeli et al. (2002) emphasize in their definition that work engagement is not an attitude or work behavior but rather a stable and flexible work state. Bakker et al. (2008) state that work engagement focuses on positive, momentary experiences that describe an individual's physical, emotional, and cognitive involvement in work.

### 2.1.5 Turnover Intention

According to Tett & Meyer (1993), turnover intention is defined as an employee's conscious and deliberate desire to leave their company, resulting from an active evaluation of their working conditions. Essentially, turnover intention is an antecedent of turnover and can predict actual turnover (Griffeth et al., 2000), making it the strongest predictor of this behavior. High employee turnover often has a direct negative impact on the company, such as decreased employee morale and productivity, which ultimately affects company efficiency (Sulek et al., 2017). Furthermore, among crew members, turnover intention is closely related to the unique characteristics of work in the maritime environment, such as long boarding periods, shift systems, and reliance on the captain's

instructions during the voyage. These conditions often cause high physical and mental stress for crew members.

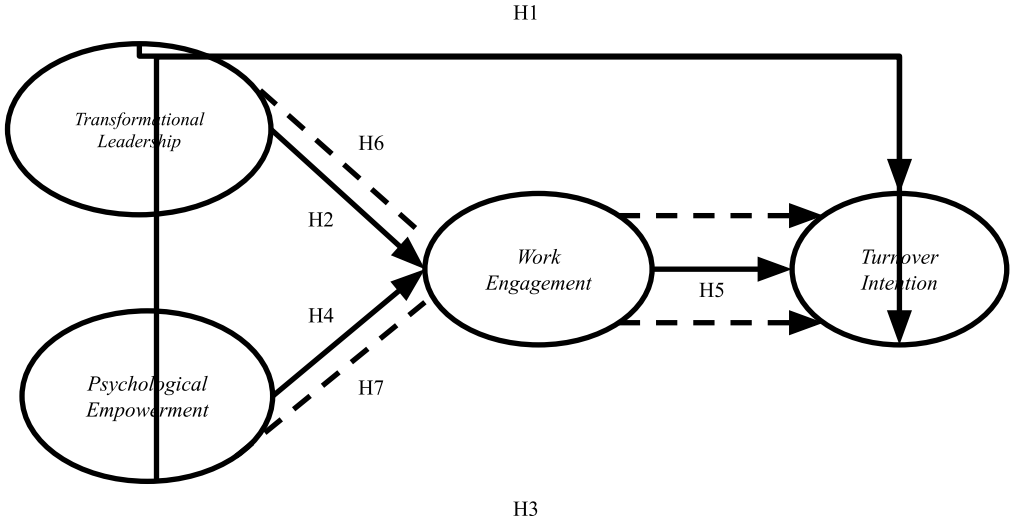


**Figure 1. Conceptual Framework**

## 3. METHODOLOGY

Based on the formulation of the problems encountered and the research objectives determined, this research is an explanatory study with a quantitative approach. Quantitative research can be considered objective research with empirical assessment in the form of the measurement and analysis of numerical data (Zikmund et al., 2010:134). It includes opinions, knowledge, attitudes, and behavior of the sample, which are then converted into numerical data (Cooper & Schindler, 2014:146). The unit of analysis in this study is the individual (ABK PT ABC), so all variables are measured based on the respondents' perceptions through distributed questionnaires.

In this study, the authors used ABK PT ABC as the research population, comprising 80 employees (excluding ship captains). While the sample is part of a larger population. Sampling was carried out to estimate unknown characteristics of a population (Zikmund et al., 2010:387). The sample used was ABK PT ABC (as respondents). The authors used a total sampling approach (saturated sampling), in which the entire population served as the research sample.

The data types used in this study are nominal and ordinal. Nominal data are used to classify respondents' characteristics that are categorical and lack a particular order, such as gender. Ordinal data is used to describe respondents' characteristics that have a specific level or order, such as age, level of education, and length of service, which are presented as range categories or education levels. Primary data were obtained directly from respondents through the distribution of questionnaires compiled according to the research variables. In addition, interviews with management and field observations were used to enrich understanding. Meanwhile, secondary data were obtained from relevant, credible, and important sources. Data collection techniques were carried out in two ways: library studies and field research.

Data analysis is the process undertaken after all data has been collected, both from respondents and other sources. The analysis technique used in this study is PLS-SEM. The use of PLS-SEM was motivated by its flexibility regarding sample size, the relatively small sample size in this study, its prediction-oriented nature (causal-predictive approach), and the non-normal distribution of the data, which is more suitable for this method (Hair et al., 2021). Path coefficients are the results of regressing each construct measured formatively on its related indicators. Thus, these results represent the relative importance of each indicator in forming the construct. Hypothesis testing is a statistical method for evaluating the significance of research hypotheses. Using the bootstrapping method, hypothesis testing is carried out by comparing the significance of the path coefficient (P-value) with the t-statistic value. When the t-statistic significance value is $> 1.96$ and the P-value is $< 0.05$ ($\alpha = 0.05$), each independent variable has a significant influence on the dependent variable, directly or indirectly.

## 4. ANALYSIS AND FINDINGS

### 4.1 Instrument Test

Instrument testing was conducted to ensure that all research variable indicators used were valid and reliable, and that the questionnaire distributed was appropriate and of good quality. In PLS-SEM, instrument testing is also known as outer model evaluation. Before conducting comprehensive model testing on all respondents, the researchers conducted a pilot test on 30 respondents.

#### 4.1.1 Validity Test

26. Convergent Validity

In convergent validity, there are two benchmark measures: the indicator-level outer loading and the average variance extracted (AVE) for the latent variable. If each indicator has an outer loading value > 0.70 and an AVE > 0.50, it can be considered valid and suitable for use (Hair et al., 2017).

**Table 3. Outer Loading Values**

| Variables | Indicator | Outer Loading | Results |
|---|---|---|---|
| Transformational Leadership | $X_{1.1}$ | 0.829 | Valid |
| | $X_{1.2}$ | 0.802 | Valid |
| | $X_{1.3}$ | 0.777 | Valid |
| | $X_{1.4}$ | 0.805 | Valid |
| | $X_{1.5}$ | 0.781 | Valid |
| | $X_{1.6}$ | 0.797 | Valid |
| | $X_{1.7}$ | 0.772 | Valid |
| | $X_{1.8}$ | 0.776 | Valid |
| Psychological Empowerment | $X_{2.1}$ | 0.832 | Valid |
| | $X_{2.2}$ | 0.744 | Valid |
| | $X_{2.3}$ | 0.810 | Valid |
| | $X_{2.4}$ | 0.795 | Valid |
| | $X_{2.5}$ | 0.816 | Valid |
| | $X_{2.6}$ | 0.803 | Valid |
| | $X_{2.7}$ | 0.806 | Valid |
| | $X_{2.8}$ | 0.839 | Valid |
| | $X_{2.9}$ | 0.810 | Valid |
| | $X_{2.10}$ | 0.793 | Valid |
| | $X_{2.11}$ | 0.810 | Valid |
| | $X_{2.12}$ | 0.780 | Valid |
| Work Engagement | $Z._{1}$ | 0.795 | Valid |
| | $Z._{2}$ | 0.818 | Valid |
| | $Z._{3}$ | 0.752 | Valid |
| | $Z._{4}$ | 0.816 | Valid |
| | $Z._{5}$ | 0.802 | Valid |
| | $Z._{6}$ | 0.803 | Valid |
| | $Z._{7}$ | 0.852 | Valid |
| | $Z._{8}$ | 0.748 | Valid |
| | $Z._{9}$ | 0.834 | Valid |
| Turnover Intention | $Y._{1}$ | 0.883 | Valid |
| | $Y._{2}$ | 0.855 | Valid |
| | $Y._{3}$ | 0.872 | Valid |

Based on Table 3, the outer loading value for all indicators is > 0.70. Therefore, all indicators used in each variable can be considered valid and suitable for further analysis in this study. Next, the AVE values for each variable are shown below.

**Table 4. AVE Value**

| Variables | AVE |
|---|---|
| Transformational Leadership | 0.628 |
| Psychological Empowerment | 0.645 |
| Work Engagement | 0.644 |
| Turnover Intention | 0.757 |

According to Table 4, all research variables have AVE values> 0.50. Therefore, all indicators used to measure each variable are considered valid.

27. Discriminant Validity

Discriminant validity comprises three measures: the HTMT value, the Fornell-Larcker value, and cross-loadings. In the HTMT value, a clear HTMT value below 1 indicates discriminant validity and is considered valid, with thresholds of 0.85 (strict) and 0.90 (liberal) (Henseler et al., 2015:121). For the Fornell-Larcker value, the square root of the AVE value must be greater than the correlation between constructs in the model (Hair et al., 2020).

**Table 5. HTMT Values**

| Variables | COM | IMP | ME | PE | Elementary School | TL | IT |
|---|---|---|---|---|---|---|---|
| COM ($X_{2)}$ | | | | | | | |
| IMP ($X_{2)}$ | 0.835 | | | | | | |
| ME ($X_{2)}$ | 0.926 | 0.832 | | | | | |
| PE ($X_{2)}$ | 1,007 | 0.979 | 0.986 | | | | |
| SD ($X_{2)}$ | 0.841 | 0.838 | 0.777 | 0.956 | | | |
| TL ($X_{1)}$ | 0.699 | 0.630 | 0.860 | 0.762 | 0.658 | | |
| TI (Y) | 0.723 | 0.829 | 0.880 | 0.838 | 0.699 | 0.832 | |
| WE (Z) | 0.729 | 0.788 | 0.790 | 0.808 | 0.709 | 0.723 | 0.745 |

Based on Table 5, all research variables have HTMT values that meet the criteria for discriminant validity. Furthermore, for the four dimensions of psychological empowerment (COM, IMP, ME, and SD), HTMT values exceeded the threshold but were tolerated because all four are dimensions of psychological empowerment. Therefore, it is quite reasonable for them to have relatively high HTMT values.

**Table 6. Fornell Larcker Values**

| Variables | COM | IMP | ME | PE | Elementary School | TL | IT | WE |
|---|---|---|---|---|---|---|---|---|
| COM ($X_{2)}$ | **0.885** | | | | | | | |
| IMP ($X_{2)}$ | 0.723 | **0.892** | | | | | | |
| ME ($X_{2)}$ | 0.802 | 0.726 | **0.888** | | | | | |
| PE ($X_{2)}$ | 0.909 | 0.891 | 0.897 | **0.803** | | | | |
| SD ($X_{2)}$ | 0.744 | 0.747 | 0.693 | 0.889 | **0.920** | | | |
| TL ($X_{1)}$ | 0.623 | 0.566 | 0.772 | 0.715 | 0.603 | **0.793** | | |
| TI (Y) | -0.615 | -0.710 | -0.752 | -0.750 | -0.612 | -0.735 | **0.870** | |
| WE (Z) | 0.656 | 0.712 | 0.714 | 0.763 | 0.655 | 0.673 | -0.660 | **0.803** |

Based on table 6, the AVE square root value of each research variable has a greater value compared to the correlation value between the variable and other variables in mode l so that it meets the requirements of discriminant validity.

**Table 7. Cross Loading**

| Indicator | TL ($X_1$) | ME ($X_{2}$) | COM ($X_{2}$) | SD ($X_2$) | IMP ($X_2$) | WE (Z) | TI (Y) |
|---|---|---|---|---|---|---|---|
| $X_{1.1}$ | **0.829** | 0.612 | 0.516 | 0.460 | 0.488 | 0.548 | -0.673 |
| $X_{1.2}$ | **0.802** | 0.626 | 0.467 | 0.401 | 0.374 | 0.503 | -0.607 |
| $X_{1.3}$ | **0.777** | 0.512 | 0.487 | 0.518 | 0.387 | 0.474 | -0.481 |
| $X_{1.4}$ | **0.805** | 0.532 | 0.427 | 0.428 | 0.442 | 0.575 | -0.475 |
| $X_{1.5}$ | **0.781** | 0.606 | 0.502 | 0.503 | 0.450 | 0.482 | -0.565 |
| $X_{1.6}$ | **0.797** | 0.687 | 0.538 | 0.550 | 0.478 | 0.527 | -0.637 |
| $X_{1.7}$ | **0.772** | 0.556 | 0.435 | 0.404 | 0.415 | 0.452 | -0.592 |
| $X_{1.8}$ | **0.776** | 0.723 | 0.560 | 0.550 | 0.529 | 0.673 | -0.600 |
| $X_{2.1}$ | 0.768 | **0.832** | 0.706 | 0.697 | 0.694 | 0.671 | -0.809 |
| $X_{2.2}$ | 0.722 | **0.744** | 0.645 | 0.568 | 0.565 | 0.587 | -0.650 |
| $X_{2.3}$ | 0.567 | **0.810** | 0.781 | 0.575 | 0.668 | 0.640 | -0.641 |
| $X_{2.4}$ | 0.537 | 0.708 | **0.795** | 0.660 | 0.621 | 0.576 | -0.602 |
| $X_{2.5}$ | 0.528 | 0.711 | **0.816** | 0.666 | 0.641 | 0.596 | -0.472 |
| $X_{2.6}$ | 0.590 | 0.708 | **0.803** | 0.648 | 0.656 | 0.568 | -0.559 |
| $X_{2.7}$ | 0.539 | 0.626 | 0.688 | **0.806** | 0.642 | 0.599 | -0.542 |
| $X_{2.8}$ | 0.613 | 0.696 | 0.684 | **0.839** | 0.702 | 0.589 | -0.606 |
| $X_{2.9}$ | 0.511 | 0.588 | 0.681 | **0.810** | 0.717 | 0.619 | -0.539 |
| $X_{2.10}$ | 0.534 | 0.633 | 0.685 | 0.648 | **0.793** | 0.639 | -0.654 |
| $X_{2.11}$ | 0.487 | 0.641 | 0.619 | 0.734 | **0.810** | 0.617 | -0.630 |
| $X_{2.12}$ | 0.494 | 0.669 | 0.630 | 0.614 | **0.780** | 0.650 | -0.615 |
| $Z._{1}$ | 0.533 | 0.596 | 0.533 | 0.632 | 0.661 | **0.795** | -0.520 |
| $Z._{2}$ | 0.575 | 0.661 | 0.614 | 0.604 | 0.578 | **0.818** | -0.515 |
| $Z._{3}$ | 0.452 | 0.466 | 0.436 | 0.452 | 0.492 | **0.752** | -0.474 |
| $Z._{4}$ | 0.501 | 0.554 | 0.489 | 0.462 | 0.517 | **0.816** | -0.493 |
| $Z._{5}$ | 0.517 | 0.575 | 0.544 | 0.489 | 0.595 | **0.802** | -0.622 |
| $Z._{6}$ | 0.547 | 0.554 | 0.608 | 0.565 | 0.613 | **0.803** | -0.524 |
| $Z._{7}$ | 0.590 | 0.603 | 0.522 | 0.535 | 0.667 | **0.852** | -0.547 |
| $Z._{8}$ | 0.590 | 0.514 | 0.440 | 0.436 | 0.450 | **0.748** | -0.510 |
| $Z._{9}$ | 0.549 | 0.616 | 0.527 | 0.534 | 0.546 | **0.834** | -0.550 |
| $Y._{1}$ | -0.668 | -0.659 | -0.528 | -0.571 | -0.654 | -0.590 | **0.883** |
| $Y._{2}$ | -0.654 | -0.642 | -0.590 | -0.505 | -0.574 | -0.547 | **0.855** |
| $Y._{3}$ | -0.596 | -0.661 | -0.486 | -0.521 | -0.624 | -0.586 | **0.872** |

Based on Table 7, the cross-loadings of each indicator from each variable meet the discriminant validity criteria, indicating that the indicators are valid.

### 4.1.2 Reliability Test

The reliability test in this study aims to assess the quality of each item to determine whether it produces consistent and reliable results. If the composite reliability and Cronbach's alpha values are >0.60, then the indicator used can be considered reliable and suitable for use (Hair et al., 2017).

**Table 8. Composite Reliability and Cronbach's Alpha Values**

| Variables | Composite Reliability | Cronbach 's Alpha | Results |
|---|---|---|---|
| Transformational Leadership ($X_{1)}$ | 0.931 | 0.915 | Reliable |
| Psychological Empowerment ($X_{2)}$ | 0.956 | 0.950 | Reliable |
| Work Engagement (Z) | 0.942 | 0.931 | Reliable |
| Turnover Intention (Y) | 0.904 | 0.840 | Reliable |

Based on table 8, all variables have composite reliability and Cronbach's alpha values exceeding 0.60, so they can be said to be reliable and suitable for use in hypothesis testing.

### 4.1.3 Partial Least Square (PLS) Analysis

1. Outer Model

Basically, the outer model is useful for evaluating the accuracy of using measured indicators (the measurement model) and for explaining the relationships between latent variables and their indicators.

2. Inner Model

The inner model describes the relationships between the latent variables in the research model, both exogenous and endogenous. Therefore, this research model explains the patterns of direct and mediating relationships among variables that influence turnover intention.

3. Path Diagram Construction

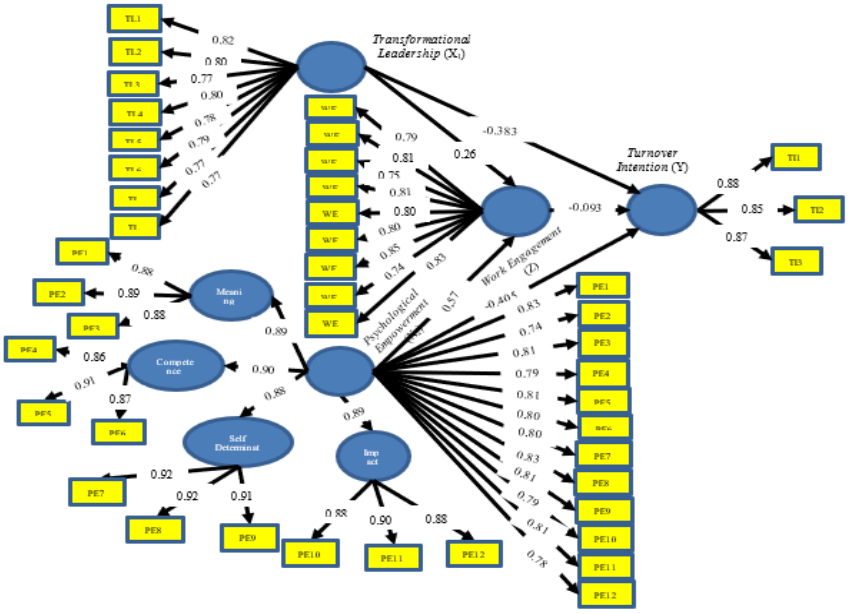


**Figure 2. Path Diagram Construction**

Basically, indicators reflect their latent constructs, so the research falls under the reflective model research.

4. Goodness of Fit Evaluation

The evaluation of goodness of fit itself involves two stages: outer model evaluation and inner model evaluation. The outer model evaluation assesses the accuracy of using the measured indicators (measurement model). The inner model evaluation. The purpose of this test is to evaluate the structural model (to determine the level of

significance of the relationship between research variables). The collinearity test refers to the variance inflation factor (VIF). A higher VIF indicates greater collinearity, and vice versa (Hair et al., 2021:93). The following are the VIF results.

**Table 9. VIF values**

| Indicator | VIF |
|---|---|
| $X_{1.1}$ | 2,727 |
| $X_{1.2}$ | 2,221 |
| $X_{1.3}$ | 2,168 |
| $X_{1.4}$ | 2,364 |
| $X_{1.5}$ | 2,179 |
| $X_{1.6}$ | 2,252 |
| $X_{1.7}$ | 2,037 |
| $X_{1.8}$ | 2,232 |
| $X_{2.1}$ | 3,097 |
| $X_{2.2}$ | 2,678 |
| $X_{2.3}$ | 3,498 |
| $X_{2.4}$ | 2,807 |
| $X_{2.5}$ | 3,119 |
| $X_{2.6}$ | 2,786 |
| $X_{2.7}$ | 3,958 |
| $X_{2.8}$ | 3,942 |
| $X_{2.9}$ | 3,802 |
| $X_{2.10}$ | 3.108 |
| $X_{2.11}$ | 3,470 |
| $X_{2.12}$ | 2,633 |
| $Z._{1}$ | 2,644 |
| $Z._{2}$ | 3.134 |
| $Z._{3}$ | 2,222 |
| $Z._{4}$ | 2,727 |
| $Z._{5}$ | 2,382 |
| $Z._{6}$ | 2,816 |
| $Z._{7}$ | 3,171 |
| $Z._{8}$ | 2,180 |
| $Z._{9}$ | 2,838 |
| $Y._{1}$ | 2,098 |
| $Y._{2}$ | 1,833 |
| $Y._{3}$ | 2,071 |

Based on Table 9, most of the research variables have low VIF values below 3, thus avoiding collinearity issues. Although some indicators have VIF values above 3, they remain within a reasonable threshold and are therefore quite safe. Next, we move on to the path coefficients. Path coefficients range from -1 to +1.

**Table 10. Path Coefficients values**

| Influence | Coefficient |
|---|---|
| Transformational Leadership ($X_{1)}$ -> Turnover Intention (Y) | -0.383 |
| Transformational Leadership ($X_{1)}$ -> Work Engagement (Z) | 0.260 |
| Psychological Empowerment ($X_{2)}$ -> Turnover Intention (Y) | -0.405 |
| Psychological Empowerment ($X_{2)}$ -> Work Engagement (Z) | 0.577 |
| Work Engagement (Z) -> Turnover Intention (Y) | -0.093 |

Based on Table 10, two of them have positive path coefficients (greater than 0). In this study, the independent variable influences the mediating variable positively, while the independent variable influences the dependent variable negatively, and the mediating variable influences the dependent variable negatively. Furthermore, the following are the results of the R-Square calculation.

**Table 11. R-Square value**

| Variables | R-Square | Information |
|---|---|---|
| Work Engagement (Z) | 0.616 | Currently |
| Turnover Intention (Y) | 0.647 | Currently |

Based on Table 11, the R-square values for work engagement (0.616) and turnover intention (0.647) are both in the moderate category. This means that the exogenous variables can explain 60% of the endogenous variables, while the remaining 35-40% is explained by variables outside this study. The next test is the effect size ($f^{2)}$ where the values 0.02, 0.15, and 0.35 represent small, medium, and large effect sizes (Cohen, 1988; Hair et al., 2017:211), the results are as follows:

**Table 12. F -Square Value**

| Variables | F-Square | |
|---|---|---|
| | Work Engagement (Z) | Turnover Intention (Y) |
| Transformational Leadership ($X_{1)}$ | 0.086 | 0.187 |
| Psychological Empowerment ($X_{2)}$ | 0.423 | 0.159 |
| Work Engagement (Z) | | 0.009 |
| Turnover Intention (Y) | | |

Based on table 12, transformational leadership (X1) has a small influence on work engagement (Z) with a value of 0.086 and is moderate on turnover intention (Y) with a value of 0.187. Meanwhile, Psychological Empowerment (X2) has a large influence on work engagement (Z) ($\beta = 0.423$) and a moderate influence on turnover intention (Y) ($\beta = 0.159$). Then, work engagement (Z) has a very small influence on turnover intention (Y), with a value of 0.009, below the small category threshold (0.02).

Next, cross-validated redundancy (Q2) is performed. The higher the Q-square, the more predictive the model's of the data. The following is the manual Q-square calculation in this study.

$Q^2 = 1 - (1-R^2_{1)} (1-R^2_{2)}$
$Q^2 = 1 - (1-0.616) (1-0.647) = 0.864$
Based on the Q-Square calculation above, the value obtained is 0.864 or 86.4%. This indicates that the model has strong predictive relevance, as it explains 86.4% of the information in the research data. And the final test is goodness-of-fit: if the SRMR value is < 0.08, it is generally considered a good model, while $0.08 \leq SRMR \leq 0.10$ is still acceptable (Henseler et al., 2016:12).

**Table 13. SRMR values**

| | Saturated Model | Estimated Model |
|---|---|---|
| SRMR | 0.080 | 0.083 |

Based on Table 13, the SRMR value is 0.080, indicating that the model remains in the acceptable range and can represent real data and phenomena in the field.

### 4.2 Mediation and Hypothesis Testing

### 4.2.1 Mediation Test

The test itself is useful for examining whether work engagement, as the mediating variable in this study, mediates the relationship between the dependent and independent variables. The extent of the mediation role can then be determined by the VAF value. The following is the VAF calculation for H6 of this study.
Total Effect Formula:

Total Effect = Total Direct Effect + Total Indirect Effect
Total Effect = -0.383 + (-0.024)
= -0.407

VAF = (Indirect Effect / Total Effect) × 100%
VAF = (-0.024 / -0.407) × 100%
VAF = 0.059 × 100% = 5.9%

A VAF of 5.9% was obtained within the <20% criterion, indicating that work engagement does not mediate the influence of transformational leadership on turnover intention. The following is the VAF calculation:
Total Effect Formula:
Total Effect = Total Direct Effect + Total Indirect Effect
Total Effect = -0.405 + (-0.054)
= -0.459
VAF = (Indirect Effect / Total Effect) × 100%
VAF = (-0.054 / -0.459) × 100%
VAF = 0.118 × 100% = 11.8%

Based on these calculations, the VAF value was obtained at 11.8% which falls within the criteria of a VAF value <20%, meaning that work engagement also does not mediate the influence of psychological empowerment on turnover intention.

### 4.2.2 Hypothesis Testing

Hypothesis testing is useful for verifying the significance of research hypotheses using the bootstrapping method in SmartPLS. The following table displays the results of the hypothesis testing in this study.

**Table 14. Hypothesis Testing**

| Hypothesis | Influence | Path Coefficient | T-statistic | P-value | Information |
|---|---|---|---|---|---|
| H1 | $X_1$ - Y | -0.383 | 3,737 | 0,000 | Significant |
| H2 | $X_1$ - Z | 0.260 | 2,523 | 0.012 | Significant |
| H3 | $X_2$ - Y | -0.405 | 4,106 | 0,000 | Significant |
| H4 | $X_2$ - Z | 0.577 | 5,481 | 0,000 | Significant |
| H5 | Z - Y | -0.093 | 0.850 | 0.395 | Not Significant |
| H6 | $X_1$ - Z - Y | -0.024 | 0.740 | 0.459 | Not Mediating |
| H7 | $X_2$ - Z - Y | -0.054 | 0.807 | 0.420 | Not Mediating |

Based on Table 14, not all hypotheses in this study were accepted. Four hypotheses were found to be significant, while the other three were not.

### 4.3 Discussion of Results

#### 4.3.1 The Influence of Transformational Leadership on Turnover Intention of ABK PT ABC

Based on the results of the hypothesis test, transformational leadership has been shown to have a significant negative effect on turnover intention at ABK PT ABC; thus, hypothesis 1 is accepted. This indicates that the

higher and more intense the implementation of a transformational leadership style by board members, the lower the likelihood that crew members will leave the company or their jobs. The results of this study are in line with those of Diko & Saxena (2023) and Park & Pierce (2020). Furthermore, the implementation of a transformational leadership style is strongly associated with high productivity and higher employee satisfaction (Pranaya, 2008). It is important to note that transformational leadership has been considered an important factor in reducing employee desire to leave and improving overall employee well-being (Gyensare et al., 2016), including for crew members.

### 4.3.2 The Influence of Transformational Leadership on Work Engagement of ABK PT ABC

Based on the results of the hypothesis test, transformational leadership has a significant positive effect on the work engagement of ABK PT ABC, thereby accepting Hypothesis 2. This indicates that the more effectively leaders on board implement a transformational leadership style, the higher crew members' engagement with their work. The results of this study align with previous research (Chen & Cuervo, 2022; Diko & Saxena, 2023; Ntseke et al., 2022). When employees work under a high-quality leader who practices transformational leadership, their engagement and satisfaction with their work will increase. Leaders who can inspire subordinates by articulating a shared vision, goals, and values will increase their engagement and work engagement (Diko & Saxena, 2023), including crew members.

### 4.3.3 The Influence of Psychological Empowerment on Turnover Intention of ABK PT ABC

Based on the results of the hypothesis test, psychological empowerment has a significant negative effect on turnover intention at ABK PT ABC; thus, hypothesis 3 is accepted. This indicates that the higher and stronger the level of psychological empowerment, the lower the tendency for ABK to leave the company or their job. The results of this study align with those of previous research (Ding, 2023; Suifan et al., 2020). Furthermore, more empowered employees tend to evaluate their work positively, are more loyal and attached to the company, and are less likely to want to leave the company (Seibert et al., 2011), including ABK. In fact, empowerment increases a person's self-confidence and self-esteem (Akgunduz & Bardakoglu, 2017). As a result, social exchange among employees begins with, according to previous social exchange theory, empowered employees demonstrating positive organizational attitudes and behaviors and significantly reducing turnover intentions (Suifan et al., 2020), which, of course, also occurs in the context of ABK.

### 4.3.4 The Influence of Psychological Empowerment on Work Engagement of ABK PT ABC

Based on the results of the hypothesis test, psychological empowerment has a significant positive effect on work engagement at ABK PT ABC, so hypothesis 4 is accepted. This indicates that the higher and more robust the level of psychological empowerment, the stronger ABK's attachment to their work tends to be. The results of this study align with those of previous studies (Al Otaibi et al., 2023; Monje-Amor et al., 2021; Wen et al., 2023). It is known that when a company provides a harmonious workplace atmosphere, emphasizes a meaningful psychological state, prioritizes the safety and comfort of employees, and provides the facilities and resources needed, employees in that company will have higher participation and contribute more to the company (May et al., 2004). Psychologically empowered employees will be more committed to their work and to their company, and more involved in their company (Alotaibi et al., 2020).

### 4.3.5 The Influence of Work Engagement on Turnover Intention of ABK PT ABC

Based on the results of the hypothesis test, work engagement has a negative but non-significant effect on turnover intention. among the ABK of PT ABC, thus rejecting Hypothesis 5. This proves that the higher the ABK's commitment and involvement in their work, the less likely they are to leave the company. The results of this study are inconsistent with previous research (Memon et al., 2021; Monje-Amor et al., 2021; Ntseke et al., 2022). Generally, individuals with high levels of engagement at work can build high-quality, trusting relationships with their employer. Thus, they tend to show more positive attitudes, behaviors, and intentions towards the company (Ajayi et al., 2017). However, this situation apparently does not apply to ABK, where high engagement and involvement in the workplace are not among the main considerations in deciding to stay or leave the job or company, at least in the context of ABK at PT ABC.

### 4.3.6 The Mediation Role of Work Engagement on the Influence of Transformational Leadership on Turnover Intention of ABK PT ABC

Based on the results of the hypothesis testing, work engagement is not found to mediate the effect of transformational leadership on turnover intention at ABK PT ABC, so hypothesis 6 is rejected. This shows that although transformational leadership has a significant positive effect on work engagement and a significant negative effect on turnover intention, work engagement cannot act as a mediator in the relationship between transformational leadership and turnover intention. Therefore, the results of this study are inconsistent with the results of previous research (Diko & Saxena, 2023). However, it turns out, this does not apply to the context of ABK, especially ABK PT ABC, where good transformational leadership by leaders on the board does not need to go through ABK's attachment to their work to be able to minimize the emergence of the desire to leave the job or the company within ABK.

### 4.3.7 The Mediation Role of Work Engagement on the Influence of Psychological Empowerment on Turnover Intention of ABK PT ABC

Based on the results of the hypothesis test, work engagement does not mediate the relationship between psychological empowerment and turnover intention at ABK PT ABC; thus, Hypothesis 7 is rejected. This shows that although psychological empowerment has a significant positive effect on work engagement and a significant negative effect on turnover intention, work engagement cannot mediate the relationship between psychological empowerment and turnover intention. Therefore, the results of this study are inconsistent with previous research (Bhatnagar, 2012). Furthermore, psychological empowerment is recognized as a potential underlying mechanism (Monje-Amor et al., 2021). However, this kind of thing does not fully apply to ABK, especially ABK PT ABC. In fact, the ABK's attachment and involvement in their work are unable to act as a mediator in the influence of psychological empowerment on the intention to leave the job at ABK PT ABC. This shows that work engagement plays a very limited role and cannot mediate this relationship.

## 5. CONCLUSION

Based on the results of data testing and discussion on ABK PT ABC, it can be concluded: 1) Transformational leadership is proven to have a significant negative effect on turnover intention; 2) Transformational leadership is proven to have a significant positive effect on work engagement; 3) Psychological empowerment is proven to have a significant negative effect on turnover intention; 4) Psychological empowerment is proven to have a significant positive effect on work engagement. 5) Work engagement is proven to have a negative but not significant effect on turnover intention; 6) Work engagement is proven not to mediate the effect of transformational leadership on turnover intention; 7) Work engagement is proven not to mediate the influence of psychological empowerment on turnover intention.

This study demonstrates that transformational leadership and psychological empowerment play direct, significant roles in reducing turnover intention among maritime crew members. However, contrary to dominant theoretical assumptions, work engagement does not significantly influence turnover intention nor mediate these relationships. This suggests that in high-risk, high-intensity work environments, direct organizational and leadership factors may be more critical than attitudinal mechanisms in shaping employee retention decisions.

It is hoped that further research will reveal that not all theoretical relationships apply universally across different industrial contexts. This means that new developments can lead to new findings, and therefore, it is hoped that further research can modify the model or use different object characteristics, such as the type of organization or industrial sector selected, or the number of samples used. Thus, it is hoped that future research will provide new perspectives, leading to discoveries that deepen and broaden knowledge in the field of human resource management, particularly related topics.

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